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Moringa oleifera Lam. inhibits human macrophage cytokine production induced by cigarette smoke

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Moringa oleifera Lam. (MO) has been reported to harbor anti-oxidation and anti-inflammatory activity and is useful in the treatment of inflammatory diseases. However, despite these findings there has been little work done on the effects of MO on immune cellular function. Since macrophages, TNF and related cytokines play an important pathophysiologic role in lung damage induced by cigarette smoke, we examined the effects of MO on cigarette smoke extract (CSE) - induced cytokine production by human macrophages. An ethyl acetate fraction of MO (MOEF) was prepared from fresh leaves extract of Moringa and shown to consist of high levels of phenolic and antioxidant activities. Human monocyte derived macrophages (MDM) pre-treated with varying concentrations of MOEF showed decreased production of TNF, IL-6 and IL-8 in response to both LPS and CSE. The decrease was evident at both cytokine protein and mRNA levels. Furthermore the extract inhibited the expression of RelA, a gene implicated in the NF-κB p65 signaling in inflammation. The findings highlight the ability of MOEF to inhibit cytokines (IL-8) which promote the infiltration of neutrophils into the lungs and others (TNF, IL-6) which mediate tissue disease and damage.

Biography

I graduated in Biomedical Sciences from Thammasat University, Thailand on 2008 and completed a postdoctoral research fellowship at Immunopathology, SA Pathology,Women's and Children's Hospital, University of Adelaide, Australia on 2013. I have been Deputy Dean for research and graduate Faculty of Allied Health Sciences, Naresuan University Phitsanulok, Thailand. I am currently Assistant Professor in Immunology at Naresuan University of Thailand. My present research activities are in the field of immunology and inflammation. My research team is focusing on the macrophage.

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